

U.S. Department of Commerce, Patent and Trademark Office		Docket No.	Serial No.
AVALANCHE PHOTODIODE FOR PHOTON COUNTING APPLICATIONS AND METHOD THEREOF		OPTONICS 05D1	10/721,915
LIST OF RELEVANT ART CITED BY APPLICANT (Use several sheets if necessary)		Applicant	
		VICKERS et al.	
		Filing Date Nov. 24, 2003	Group



## U.S. Patent Documents

*Examiner Initial		Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
S.B.G.	AA	5,539,221	7/23/1996	Tsuji et al.	257	186	
S.B.G.	AB	5,543,629	<del>6/8/1996</del> 8/6/96	Nakamura et al.	257	21	
S.B.G.	AC	5,912,478	6/15/1999	Barrou et al.	257	185	
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

## Foreign Patent Documents

## Translation

		Document Number	Date	Country	Class	Subclass	Yes	No
S.B.G.	AL	EP 0451931	10/16/1991	EP	H01L	31/107	X	
S.B.G.	AM	EP 1134812	09/19/2001	EP	H01L	31/0352	X	
S.B.G.	AN	EP 0609884	08/10/1994	EP	H01L	31/107	X	
S.B.G.	AO	EP 0549292	06/30/1993	EP	H01L	31/107	X	
S.B.G.	AP	EP 0082787	06/29/1983	EP	H01L	31/10		X

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AQ	
	AR	
	AS	

Examiner

S.B.G.

Date Considered

4-22-04

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.

U.S. Department of Commerce, Patent and Trademark Office	Docket No.	Serial No. <u>10/721915</u>
<b>AVALANCHE PHOTODIODE FOR PHOTON COUNTING APPLICATIONS AND METHOD THEREOF</b>	OPTONICS 05DI	Div. of 10/294,434
LIST OF RELEVANT ART CITED BY APPLICANT	Applicant: <u>VICKERS, James</u>	
(Use several sheets if necessary)	Filing Date	Group

## U.S. Patent Documents

*Examiner Initial		Document Number	Issue Date	Name	Class	Subclass	Filing Date If Appropriate
<u>SBG</u>	AA	6,342,701	01/29/02	Kash	250	458.1	07/08/99
<u>SBG</u>	AB	6,218,657	04/17/01	Bethune et al.	250	214	10/15/98

## Foreign Patent Documents

## Translation

		Document Number	Date	Country	Class	Subclass	Yes	No
<u>SBG</u>	AC	JP-2001-237453	08/2001	Japan	—	—	X	

## OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

<u>SBG</u>	AD	McIntyre, R. J., Multiplication Noise in Uniform Avalanche Diodes, IEEE Transaction on Electron Devices, ED 13, 164-168 (1966);
<u>SBG</u>	AE	McIntyre R. J., A New Look at Impact ionization – Part I: A Theory of Gain, Noise, Breakdown Probability, and Frequency Response, IEEE Transaction on Electron Devices, 46, 1623-1631 (1999)
<u>SBG</u>	AF	Yuan, P., Anselm, K. A., Hu, C., Nie, H., Lenox, C., Holms, A. L., Streetman, B. G., Campbell, J. C., and McIntyre, R. J., A New Look at Impact Ionization – Part II: Gain and Noise in Short Avalanche Photodiodes, IEEE Transactions on Electron Devices, 46, 1632-1639 (1999).
<u>SBG</u>	AG	Campbell, J.C., Nie H., Lenox, C., Kinsey, g., Yuan, P., Holmes, A. L., Jr. and Streetman, B. G., High Speed Resonant-Cavity InGaAs/InAlAs Avalanche Photodiodes, IEEE Journal of High Speed Electronics and Systems 10, 327-337 (2000).
<u>SBG</u>	AH	); Campbell, J. C., Chandrasekhar, S., Tsang, W. T., Qua, G. J., and Johnson, B. C., Multiplication Noise of Wide-Bandwidth InP/InGaAsP/InGaAs Avalanche Photodiodes, Journal of Lightwave technology 7, 473-477, (1989)
<u>SBG</u>	AI	Kinsey, G. S., Hansing, C. C., Holmes, A. L. Jr., Streetman, B. G., Campbell, J. C., and Dentai, A. G., Waveguide In <sub>0.53</sub> Ga <sub>0.47</sub> As-In <sub>0.52</sub> Al <sub>0.48</sub> As Avalanche Photodiode, IEEE Photonics Technology Letters 12, 416-418 (2000)
<u>SBG</u>	AJ	Kinsey, G. S., Campbell, J. C., and Dentai, A. G., Waveguide Avalanche Photodiode Operating at 1.55m with a gain-Bandwidth Product of 320 GHz, IEEE Photonics Technology Letters 13, 842-844 (2001)
<u>SBG</u>	AK	C. Lenox, H. Nie, P. Yuan, G. Kinsey, A. L. Holmes, Jr., B.G. Streetman, J.C.Campbell, Resonant-Cavity InGaAs-InAlAs Avalanche Photodiodes with Gain-Bandwidth Product of 290 GHz, IEEE Photonics Technology Letters, Vol 11, No. 9 (1999)
<u>SBG</u>	AL	B. Huttner, J. Brendel, Photon-Counting Techniques for Fiber Measurements, Lightwave, (2000)
<u>SBG</u>	AM	P. Yuan, S. Wang, X. Sun, X.G. Zheng, A.L.Holmes, Jr., J.C.Campbell, Avalanche Photodiodes with an Impact-Ionization-Engineered Multiplication Region, IEEE Photonics Technology Letters, Vol 12, No. 10 (2000)
<u>SBG</u>	AN	K. Junsang, Y. Yamamoto, Noise-Free Avalanche Multiplication in Si Solid State Photomultipliers, Appl. Phys. Lett. 70 (21) (1997)
<u>SBG</u>	AO	Avalanche Photodiodes: A User's Guide, <a href="http://optoelectronics.perkinelmer.com/library/papers/tp5.asp">http://optoelectronics.perkinelmer.com/library/papers/tp5.asp</a>
<u>SBG</u>	AP	A. Rochas, P.A. Popovic, A Geiger Mode Avalanche Photodiode,
<u>SBG</u>	AQ	S. Vasile, P. Gothoskar, D.Sdrulla, R. Farrell, Photon Detection with High Gain Avalanche Photodiode Arrays, IEEE Trans. Nucl. Sci. 45, 720 (1998)
<u>SBG</u>	AR	T. Nesheim, Single photon detection using avalanche photodiode, a master thesis done in <u>Quantum Cryptography Project</u> at the <u>Department of Physical Electronics</u> , <a href="http://www.vad1.com/qcr/torbjoern/">http://www.vad1.com/qcr/torbjoern/</a> Chapter 3.

Examiner Let B. ByDate Considered 4-22-04

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